RESPONSIVENESS SUMMARY

ON THE

FINAL DRAFT ENGINEERING EVALUATION / COST ANALYSIS

DATED OCTOBER 1999

323-ACRE WOODED SITE

JEFFERSON PROVING GROUND

MADISON, INDIANA

JPG Community RAB Comments
From Letter Dated December 28, 1999

6.3.2 OE Type

We agree that the OE type to be used in the evaluation should be Category 1. Category 1 OE type Risk Factor is defined as: "OE that will cause minor injury to an individual if detonated by an individual's activities". This Category's Qualitative Risk Level is assessed to be "Medium". Since the only potentially hazardous OE item found in the intrusive investigation of the site was a fuzed, practice 60 mm round not containing HE we concur with this categorization.

Concur

6.3.3 UXO Density

We tend to agree that the estimation of the density of UXO at the 312-acre area may fall into the medium density risk category. However, it is entirely possible that the area may present a low qualitative risk level in regard to the UXO Risk Factor.

As stated in this section, the *UXO Calculator* was used for the estimation. Section 3.4.4 (UXO Calculator Application), p. 3-14 & 3-15, describes the assumptions made in using the model to determine UXO density. It is stated that "The model assumes that there is a uniform probability of the occurrence of UXO across the site; however, the model also assumes that the UXO has been randomly deposited across the site. This means that there is an equal likelihood for UXO to fall anywhere within the sector; however, there is not necessarily a uniform distribution of UXO."

We do not believe that there is a uniform probability of the occurrence of UXO across the site. Any distribution of UXO would certainly be random. However, there is probably not an equal likelihood the UXO would be found in the more interior portions of Site 1 (the 295 Acre Woods) as compared to the more outer portions. Here we are using the terms interior and outer in reference to the relative distances from Woodfill and Tokyo Roads, with areas more distant from the roads being referred to as being more interior. We base this belief on what is known about the historical use of this area. And, we believe that this is borne out by the fact that the only potentially hazardous OE item found in the intrusive investigation of Site 1 was located very near to Tokyo Road.

Therefore, we believe that this site could perhaps just as easily be described as falling into the Low Qualitative Risk Level in regard to the UXO Density Risk Factor. However, in order to fall on the side of safety we will not at this time strongly disagree with the Medium Qualitative Risk Level that the area has been assigned.

Concur - However; as an UXO was discovered during the EE/CA field investigation, we believe that a "medium" Qualitative Risk Level is more appropriate for the site.

6.3.4 Number of People Using the Site

This section concludes that the risk associated with number of people using the site as medium. We do not believe that this conclusion is necessarily correct. The conclusion is based on assumptions that: 1) Ford will be the ultimate owner of the property, and 2) potential uses by Ford will include light industrial and green space. To our knowledge Ford has confirmed neither of these assumptions. Therefore, there seems to be little reason to come to any conclusion regarding the potential number of people using the site.

The JPG Base Transition Coordinator has provided the current property owner's opinion on the most probable future land use scenarios for the property. The EE/CA will have minor revisions to incorporate the community's, current owner's, and regulator's comments that the land may be utilized by Mr. Ford for light industrial or green space, or by the local community as a park.

6.3.5 Activities at the Site

The risk associated with this factor seems to be closely related to the assumptions discussed in 6.3.4 (Number of People Using the Site). See the comments above.

The JPG Base Transition Coordinator has provided the current property owner's opinion on the most probable future land use scenarios for the property. The EE/CA will have minor revisions to incorporate the community's, current owner's, and regulator's comments that the land may be utilized by Mr. Ford for light industrial or green space, or by the local community as a park.

6.3.6 Accessibility of the Site	**We agree that under present conditions the site represents a medium risk associated with the accessibility of the site.** Concur
6.4 Conclusions	**Considering the five factors discussed above, we would conclude that the qualitative risk associated with the 312-acre area could be considered to be Medium to Low. We have rated two of the five factors as medium risk; one factor was rated as medium to low, and the remaining two factors are so questionable that they cannot be reasonably evaluated at this time. Based on our evaluation we do agree that some type of response action (e.g., institutional controls or a removal action) is necessary.** Concur - The JPG Base Transition Coordinator has provided the current property owner's opinion on the most probable future land use scenarios for the property. The EE/CA will have minor revisions to incorporate the community's, current owner's, and regulator's comments that the land may be utilized by Mr. Ford for light industrial or green space, or by the local community as a park.
7.5.1 Alternative 1: No DOD Action Indicated	**We agree that some action should be taken for the overall protection of public safety and human environment. Therefore, we concur with the decision that a NDAI alternative should not be considered.** Concur
	7.5.2.1.1 Effectiveness:
7.5.2 Alternative 2: Institutional Controls	**We agree that the implementation of institutional controls can provide sufficient risk reduction to allow further consideration of this alternative.** Concur

7.5.2.2 Implementability:

It is stated in this subsection that: "Local agencies interviewed during the Institutional Analysis indicated they would like to see the most unrestricted use of the property when it is sold." Our examination of the Results of Interviews, Appendix A of the Institutional Analysis Report (Appendix E of the Final Draft EE/CA document) in no way reveals the desire for unrestricted use of the property. Therefore, we would request that this statement be sufficiently explained and documented. If this is not possible the statement should be removed from the EE/CA Final Draft.

This same subsection does state: "Although input has not been received from the property owner [presumably Ford] or the local community, it may be *assumed* that they would also like to see the most unrestricted use of the property". We would not presume to be able to read the mind of the presumed owner. Further, we disagree that the community at large would support the expenditure of large sums of taxpayer dollars to accommodate an unrestricted use in order to subsidize the profit of a single individual or corporate entity. Therefore, we do not agree that it should be assumed that clearance activities should be preferred over institutional controls in order to provide for less restricted use of the property.

The JPG Base Transition Coordinator has provided the current property owner's opinion on the most probable future land use scenarios for the property. The EE/CA will have minor revisions to incorporate the community's, current owner's, and regulator's comments that the land may be utilized by Mr. Ford for light industrial or green space, or by the local community as a park.

7.5.3.1 Effectiveness:

7.5.3 Alternative 3: Surface Clearance of OE

This subsection contains the statement that: "The UXO item recovered during the field investigation was located approximately 2 inches (0.05 meters) below the surface. A clearance to a depth of one foot would therefore address the risk from similarly buried items." We would agree that a one foot clearance would appear to be appropriate for this area.

Further, this subsection states that: "This alternative provides for the overall protection of public safety and human environment and would be effective in both the long term and the short term." We also concur with this assessment.

Concur

7.5.3.2 Implementability:

This subsection states that: "Although input has not been received from the property owner or the local community, it may be assumed that they would also like to see the most unrestricted use of the property. This alternative will increase the usability of the property by reducing the residual UXO risk. Therefore, it is assumed that this alternative would be acceptable to the property owner and the local community." Again, we cannot presume to read the mind of the presumed property owner, but as far as the community RAB members represent the local community we would agree that a Surface Clearance would be acceptable.

The JPG Base Transition Coordinator has provided the current property owner's opinion on the most probable future land use scenarios for the property. The EE/CA will have minor revisions to incorporate the community's, current owner's, and regulator's comments that the land may be utilized by Mr. Ford for light industrial or green space, or by the local community as a park.

7.5.4.2 Implementability:

7.5.4 Alternative 4: Surface and Subsurface Clearance of OE to Depth

We again disagree with the assumption in the statement that: "Although input has not been received from the property owner or the local community, it may be assumed that they would also like to see the most unrestricted use of the property." See previous comments about this assumption. Therefore, we cannot say whether this alternative would be acceptable to the presumed property owner and can further say that in our opinion this alternative is not the preferred alternative of the local community.

The JPG Base Transition Coordinator has provided the current property owner's opinion on the most probable future land use scenarios for the property. The EE/CA will have minor revisions to incorporate the community's, current owner's, and regulator's comments that the land may be utilized by Mr. Ford for light industrial or green space, or by the local community as a park.

7.5.4.3 Cost:

Doubts have been expressed among the community RAB members as to the cost estimate associated with this alternative. The consensus has been that considering our experience with other clearance activities to a depth of four feet that the cost estimate for this area may be understated. We do expect that there will be relatively few OE items detected which may result in a lower cost than anticipated. However, the real possibility of detection of false positive hits would probably increase greatly with a subsurface clearance of OE to depth.

The alternative costs currently included in the EE/CA report for the OE clearance alternatives assume that 154 acres of the 312 acre area (50%) would need to be cleared prior to reaching the stated clean-up goal. The pricing of the OE clean-up alternatives will be revised to reflect the cost of OE clearance for the entire site. Regardless of the dollar values used for the alternatives; however, the relative ranking of the costs for the alternatives will not change.

8.2.2 Overall Protection of Public Safety and Human Environment:

8.2 Effectiveness

The determination that the Surface and Subsurface Clearance of OE to Depth would provide the best overall protection is based on "the assumption that the more ambitious OE response alternatives will recover additional OE items and will provide for a more thorough clean up of the site." Although this alternative would obviously be more thorough than the other alternatives, we are not convinced that a significantly greater amount of OE would be recovered. See comments relating to Section 6.3.3 UXO Density.

Still, we do not disagree with the general ranking as illustrated in Table 8.1 Effectiveness Criteria Application. However, even considering the assumptions of recovering more OE items and providing a more thorough clean up the differences between the resultant scores (9 for Institutional Controls, 8 for Surface Clearance, and 7 for Surface and Subsurface Clearance) are negligible in our opinion.

Concur

8.3.5 Property Owner Acceptance:

8.3 Implementability

It is our opinion that if the presumed potential owner (Ford) has declined to express any particular favor of alternative(s) then the Property Owner Acceptance cannot be accurately assessed. We therefore, object to the Property Owner Acceptance score being doubled. It can be argued that this category should be left out completely.

The JPG Base Transition Coordinator has provided the current property owner's opinion on the most probable future land use scenarios for the property. The EE/CA will have minor revisions to incorporate the community's, current owner's, and regulator's comments that the land may be utilized by Mr. Ford for light industrial or green space, or by the local community as a park.

8.3.6 Local Agency Acceptance:

The interview summaries contained in the Institutional Analysis Report don't seem to imply any particular favoring of one alternative over another. Thus, the alternatives should all be ranked the same as far as Local Agency Acceptance is concerned.

Concur

8.3.7 Community Acceptance:
The Community RAB is inclined to rank the alternatives in the following order:

Alternative	Rank
Institutional Controls	**2**
Surface Clearance of OE	**1**
Surface and Subsurface Clearance OE to Depth	**3**

(Additional Ranking Tables Provided)

The RAB rankings will be used as the community's input in the alternatives ranking.

SECTION 9 - RECOMMENDED RESPONSE ACTION

9.2 RECOMMENDED RESPONSE ACTION

9.2.1 **In our opinion the Surface Clearance of OE is the highest ranked alternative. Therefore, we would recommend that this be the recommended response action.**

A new alternatives ranking will be prepared based on the comments received from all interested parties. It does not appear; however, that the ranking will change based on these comments and the analysis of several future land use scenarios.

9.2.2 **We would recommend that the Surface clearance of OE be implemented in the shaded area as shown on Figure 9.1 of the Final Draft, page 9-2 (approximately 154 acres). We further agree that the 11-acre parcel of the site not be included in any clearance activities.**

Concur

9.2.3 **We agree with the method of proceeding in rows and columns, beginning from the roads and moving inward. If OE items are not found in the initial area, the clearance operation should be considered complete. We also agree with the approach of continuing the clearance until no OE is found in two rows or columns.**

Concur

Indiana Department of Environmental Management (IDEM) Comments From Letter Dated January 4, 2000

Specific Comments

1. **In paragraph 2.1.7.4, there is a statement that formal wetland delineation has not been conducted a JPG. In order to comply with ARARs (applicable or relevant and appropriate requirements), a formal delineation of wetlands in the Cantonment Area must be conducted, including the 323-Acre Wooded Site related to this report.**

   A wetland delineation of the project area is anticipated to be conducted by the US Army Corps of Engineers after the OE Removal Action.

2. **The only statement presented in paragraph 2.1.8.5 is incorrect. Ordinance & Explosive (OE investigation of the 323-Acre Wooded Site in order to prepare this document) was performed. A geophysical survey was part of this investigation.**

   The cited paragraph deals with historical OE investigations of the project site, not the current OE investigation.

3. **The "pseudo-random walk" method used to perform the geophysical survey of the 323-Acre Wooded Parcel as presented in paragraph 3.2.5.1 is an acceptable UXO screening tool.**

   Concur

4. **In paragraph 3.2.5.2, further explanation should be provided on why 14 random survey lines were conducted (walked) on the 312-Acre Parcel while only 7 random survey lines were conducted (walked) on the 11-Acre Parcel, which is twice as many survey lines compared to over 25 times the acreage.**

   The 11-acre sector did receive a higher percentage acre coverage; however, the number of survey lines conducted in each area is not an accurate reflection of the level of geophysical investigation within each area. Rather the length of the survey lanes and the number of acres covered within each area are more important measures of the extent of the geophysical investigation.

5. **On page 3-5, Figure 3-1 illustrates the "Pseudo-Random Walk Geophysical Survey" lines that were conducted for the 323-Acre Wooded Parcel/Site. There were two large UXO survey gaps in the 312-Acre Parcel south of the railroad line that transverses this parcel from east to west. In order for the Removal Action decisions and selection to be sound and adequate, IDEM staff believe, that at a minimum, four or five additional "pseudo-random walk" survey lines are needed for the 312-Acre Parcel. First, two or three additional "pseudo-random walk" survey lines are needed directly south of the railroad line and north of the first previously conducted "pseudo-random walk" survey line. Second, two additional "pseudo-random walk" survey lines are needed between the first and second previously conducted "pseudo-random walk" survey lines are needed between the first and second previously conducted "pseudo-random walk" survey lines south of the railroad line. Conversely, IDEM staff believe that adequate "pseudo-random walk" survey lines were conducted on the 11-Acre Parcel to make the determination for Removal Action on this parcel presented in this EE/CA report.**

   While there are some gaps in the geophysical survey lanes south of the railroad, the proposed UXO clearance for the area will cover a major portion these areas and additional pseudo-random walk survey lanes, we believe, will not alter the proposed remedial approach.

6. **In paragraph 3.2.6, Survey Area Coverage, the calculations for the percentage of area covered by the geophysical survey should also be calculated separately for the two parcels (312-Acre & 11-Acre). The information should also be presented in a table to better illustrate the calculations and compare the percentages.**

   The requested table will be added with the geophysical survey coverage information broken down between the two parcels.

7. **Tables 3.3 and 3.4 on pages 3-16 and 3-17 have used the *UXO Calculator* – Minimum Discrimination Module to determine the maximum Potential UXO Density Per Acre. These calculations indicate that there may be up to 570 UXOs in the 323-Acre Wooded Parcel. 521 UXOs in the larger 312-Acre Parcel and 49 in the smaller 11-Acre Parcel. These UXOs are thought to be 60 mm mortar rounds and 22 mm rifle grenades. One ordinance & explosive (OE) was found at two inches below the surface of the soil during the September 1998 UXO Investigation. The OE item, a 60 mm mortar round, was exploded in the May 1999 intrusive investigation. The EE/CA report indicates there was no secondary explosion upon detonation of this mortar and concludes that the mortar was filled with wax and not explosives. The Army**

should be aware that at shallow depths, a mortar that may have originally had an explosive charge, could result in the explosive material degrading over time if the mortar shell was ruptured by the impact with the ground or corroded over time due to exposure to natural processes. However, if an OE item exists at greater depth, then anaerobic conditions could exist and preserve an explosive charge. Additionally, per paragraph 2.1.8.3 of this report, the UXO investigation at the Airfield Site (891 acres) directly east of the 323-Acre Wooded Site detected 405 OE items, 19 of which were suspected of containing high explosives (HE). The military has assigned the Wooded Site as having a medium risk to human health due to explosions.

Concur

8. **From Tables 3.3 and 3.4 on pages 3-16 and 3-17, the Army should explain how the "Maximum Potential UXO Density Per Acre" for the 11-Acre Parcel is higher than for the 312-Acre Parcel, given that the 11-Acre Parcel has "zero" detections of OE or OE-related materials and the 312-Acre Parcel had two definite detections. Additionally, if this factor were strongly utilized in the decision to take action, then a removal action would also be necessary for the smaller 11-Acre Parcel.**

The *UXO Calculator* is only one of many tools used to determine the level of UXO clearance that should be performed in an area. As no OE items were found in the 11-acre parcel, despite having performed a more exhaustive investigation here, the *UXO Calculator* automatically yields a very conservative potential UXO remaining figure for the area. However, when this value is combined with the results of the field investigation and other sources of information, the No Further DOD Action Indicated alternative was selected for this parcel. In addition, the comments received from the RAB on the EE/CA document concurs with this recommendation.

9. **In Section 5.3.1, an Alternative (No. 5) should be added that involves surface and subsurface clearance to depth for the entire 323-Acre Wooded Site. This addition is necessary for a complete and adequate comparative analysis of the total spectrum of possible alternatives. This alternative would be the most complete, responsive, and protective action, which is the reflection or opposite of the NDAI (No DoD Action Indicated). The evaluation process, if properly developed and applied, would determine if it should be eliminated from selection. It would also provide the best comparative analysis for Alternative 4.**

The requested alternative already exists as Alternative 4. Costs for this alternative and Alternative 3 (Surface OE Clearance) will be adjusted to reflect performing this level of clearance over the entire site.

10. In paragraph 5.3.4.3, indicate how the geophysical anomalies will marked for later intrusive investigation. What is the length of time from marking until intrusive investigation? Indicate confidence levels and past history with relocating marked anomalies.

The specific details for the future removal action alternative have not yet been determined. Details such as the length of time between anomaly acquisition and removal will be determined during the Work Plan development for the removal action by the selected removal action contractor. The results of the OE clearance investigations conducted on other parcels of the JPG property support the statement that there is a high level of confidence in relocating marked anomalies.

11. In paragraph 6.1, please explain more completely how the 11-Acre Parcel will not be considered in the removal action despite it achieving a higher "Maximum Potential UXO Density Per Acre" than the 312-Acre Parcel.

As discussed in #8, above, the 11-acre parcel received a higher level of coverage than the 312-acre parcel and no OE or OE-related items were recovered. As a result, the *UXO Calculator* will retain a relatively high Maximum Potential UXO Density per Acre, despite the results of the field investigation. The results of the field investigation, coupled with the past use of the area identified in the Archives Search Report, indicate that the No Further DOD Action Indicated alternative is the most appropriate one for the parcel.

12. In paragraph 6.2.6, future land use and changes in site security and accessibility should be discussed in detail. A better understanding and determination of these items is necessary because once the property is transferred from the Army, land use could be greatly different than anticipated. If site restrictions are anticipated, then they should be discussed and identified within this report.

The JPG Base Transition Coordinator has provided the current property owner's opinion on the most probable future land use scenarios for the property. The EE/CA will have minor revisions to incorporate the community's, current owner's, and regulator's comments that the land may be utilized by Mr. Ford for light industrial or green space, or by the local community as a park.

13. **In paragraph 6.3.4, it should not be assumed that future land use will not produce an area considered a public attraction or tourist site. If no change is made to the property, would hunting and trapping be considered a public attraction? Since the right of first refusal belongs to a lumber company, strong consideration to lumbering must be considered, as well as, land use following the lumbering activities.**

The JPG Base Transition Coordinator has provided the current property owner's opinion on the most probable future land use scenarios for the property. The EE/CA will have minor revisions to incorporate the community's, current owner's, and regulator's comments that the land may be utilized by Mr. Ford for light industrial or green space, or by the local community as a park.

14. **In paragraph 6.3.6, during the facility's active days, the site boundary security fence and armed guards are not an adequate deterrent to prevent trespassers from entering the site mostly to hunt and trap. With much less security at this time and possibly none in the future, how can this wooded area be considered a medium risk? Mature trees are a benefit to hunting and trapping. Areas with free-standing water may be wetland areas and should be delineated as such prior to alternative selection, property value determination, or property transfer.**

The JPG Base Transition Coordinator has provided the current property owner's opinion on the most probable future land use scenarios for the property. The EE/CA will have minor revisions to incorporate the community's, current owner's, and regulator's comments that the land may be utilized by Mr. Ford for light industrial or green space, or by the local community as a park. A wetland delineation of the property is planned after the UXO clearance of the area.

15. **In paragraph 7.2.8 (Long-Term Effectiveness), without conducting an OE investigation of the entire site, untreated wastes (undetected OE items) may remain at the site following the response action which could impact the adequacy and reliability of [site] controls.**

The proposed removal action for the property will allow for only a minimal chance of any undetected OE items to remain on the property. Furthermore, the proposed removal action will be reviewed and approved by the Department of Defense Explosives Safety Board (DDESB) prior to its being implemented. The DDESB has the ultimate responsibility for public safety in regards to OE matters.

16. Section 8 is an inadequate comparative analysis without the addition of a fifth alternative that involves performance of Alternative 4 for the entire 323-Acre Wooded Site.

See response to Comment #9.

17. In paragraph 9.2.1, there is the statement that "this alternative satisfies the response action goal of reducing the explosive threat associated with UXO exposure…" This alternative does reduce the explosive threat associated with UXO exposure. Any UXO clearance would reduce the threat. It definitely reduces the threat compared to the lesser protective alternatives to which it was compared however, how would it have compared to the alternative of a complete site surface and subsurface clearance to depth? This comparison should have been evaluated.

See response to Comment #9.

18. Paragraph 9.3 on the limitation is obvious, but should be more complete in explaining the possible incompleteness of the OE investigation. The selected alternative likely will not provide a complete investigation of the entire site for the presence of OE items and this should be stated. Also, this site is not a CERCLA site as hazardous substances are not present that warrant a remedial response. Under CERCLA, a complete investigation would be performed on the entire site to depth. Nearly half of the site will likely be left unstudied. Even under a CERCLA removal action, the eminent and substantial threats to human health and the environment would be completely investigated and identified.

The field investigation described in the EE/CA was conducted to determine which removal action alternative is the most appropriate for the site. The UXO clearance alternative recommended for the 312-acre parcel will address the entire site.

General Comments:

1. Since this is not a true CERCLA action, the National Contingency Plan (NCP) does not completely apply to the action for this site. However, use of EPA Non Time Critical Removal Action guidance as a guide for developing the OE investigation and removal plan is commendable and applauded. IDEM staff believe that the statutory restrictions on cost and time should not be applied to this action in order to achieve the best possible results.

Concur

US Environmental Protection Agency (USEPA) Comments From Letter Dated December 30, 1999

US Environmental Protection Agency (USEPA) Comments from Letter Dated December 30, 1999

General Comments:

1. **The Report identifies CERCLA and the NCP as legal authorities to the investigation, however, the Report does not indicate that work plans were developed for the unexploded ordnance (UXO) geophysical survey and the intrusive investigation components of the project. Normally, engineering evaluation/cost analysis (EE/CA) work plans are prepared to evaluate the nature and extent of the situation. U.S. EPA *Guidance on Conducting Non-Time-Critical Removal Actions Under CERCLA* provides guidance for site characterization. The U.S. EPA guidance states, "The EE/CA should summarize available data on the physical, demographic, and other characteristics of the site and surrounding areas," and "Documents providing information for the EE/CA should be placed in the administrative record for the site" (Section 2.4). While UXO investigations do not need to rigorously conform with the U.S. EPA guidance, which was structured for hazardous waste investigations, the U.S. EPA guidance is, however, the only current applicable guidance for conducted EE/CA investigations under CERCLA. The investigation and intrusive efforts should follow the U.S. EPA guidance in planning the investigation, selecting and justifying investigation instruments, performing quality assurance and documenting site investigation and clearance activities. Therefore, an EE/CA work plan would be an integral component to the EE/CA, as well as the administrative record. These components should either be added to the EE/CA for purposes of incorporation into the administrative record or a document should be referenced in the EE/CA which incorporates the EE/CA work plan.**

In addition, the Report should provide justification for not submitting work plans to appropriate state and federal regulatory personnel for review and comment.

A Work Plan was prepared prior to engaging in the EE/CA field investigation. The Restoration Advisory Board (RAB) was kept fully informed of all aspects of the project. The field work was conducted in accordance with the approved Work Plan for the UXO contractor already performing UXO time critical clearance operations on other portions of the JPG site. The overall JPG site has an established RAB and lines of communication between all stakeholders. A separate RAB or exchange of information process was not created for this project.

2. The Final Draft Remedial Investigation (RI) Report (Rust Environmental, 1994) indicates that an ammunition dump is present within the boundaries of the area under the current investigation. However, the Report provides no review of the 1994 RI Report to assess the following:

- ?? **The adequacy of the UXO survey performed at the ammunition dump;**
- ?? **The applicability of the UXO technologies selected for the UXO survey at the dump;**
- ?? **Whether any UXO anomalies were actually investigated during the UXO survey of the dump; and,**
- ?? **Whether a full data analysis of the geophysical results were performed by the UXO contractor performing the survey of the dump.**

The Report should provide complete justification for not including the ammunition dump in the current UXO investigation. The Report should document a complete review of the UXO survey performed at the ammunition dump, including justification for all UXO survey equipment, methods and data reduction used in the UXO survey.

Will add a discussion of the results of the RUST Environmental RI investigation to the EE/CA report. This investigation found no evidence of an ammunition dump at the suspected site and recommended no further action for the Potential Ammo Dump Site. Justification for not including the Potential Ammo Dump Site is contained in the RUST Environmental RI report.

Nevertheless, the removal action alternative recommended in the EE/CA plans on investigating this area.

3. The Report does not identify how U.S. Army Corps of Engineers (USACE) management has communicated with appropriate state and federal regulatory personnel regarding the planning and implementation of the geophysical survey and intrusive efforts. The Report should provide a complete description of how project management was performed, identifying all Department of Defense (DOD) personnel, all contractor/subcontractor personnel and appropriate regulatory personnel (e.g., the BRAC Cleanup Team [BCT]) consulted in the investigation. Lines of communication and regulatory notification of investigation activities should be provided.

Information was provided to the RAB on several occasions providing updates on the preparation of the plans associated with the field work and the status of the field work. The minutes of these RAB meetings are available on the JPG web site. A separated RAB or exchange of information process was not created for this project.

4. The Report does not provide adequate justification for selecting the Portable Surface Towed Ordnance Locator System (STOLS) magnetometer, including a discussion of the limitations of the instrument in locating UXO. In addition, although the Report indicates that a number of other investigations were performed at the site (Section 2.1.8, Previous UXO Site Investigations), there is no indication that any evaluation of these investigations was performed to assess the applicability of the technologies to the soil and anticipated UXO for the 323-Acre Wooded Site. In addition, there is no indication that uncovered UXO at other Jefferson Proving Ground (JPG) sites was reviewed to scope the nature and extent of the current investigation with regard to impact patterns, type of UXO present and depth of UXO searches. The Report should provide complete justification for the selection of the Portable STOLS magnetometer, including an evaluation of the applicability of other technologies used at JPG.

The G858 magnetometer is one of the most highly-rated geophysical survey instruments currently available. The use of the portable STOLS positioning system in conjunction with the G858 was an innovative application used on this project. The G858 has been tested on many occasions at JPG including the UXO Technology Demonstration Programs in mid-1990. This instrument has been proven in the JPG environment.

5. The Report indicates that a test plot was constructed to standardize the Portable STOLS magnetometer used in the investigation (Section 3.2.4, Page 3-3). The test plot consisted of three (3) targets, that were placed only on the surface of the soil. Therefore, there is no indication that:

- ?? **The Portable STOLS can detect UXO at depth;**
- ?? **The targets placed were similar to the anticipated UXO for the site;**
- ?? **The soil in which the targets were placed is similar to the soils present across the site;**
- ?? **The targets were placed by the personnel actually performing the survey;**
- ?? **Any test plot was used to tract the effectiveness of field crews throughout the course of the investigation and intrusive efforts; and,**
- ?? **The additional survey instruments (e.g., hand-hold magnetometers, dual tube fluxgate gradiometer) were also tested to determine their efficiency in locating UXO at depth.**

Therefore, the Report should provide the following:

- ?? **Justification for the placement of only three (3) targets;**
- ?? **Documentation that target placement was not known by actual survey personnel;**
- ?? **Documentation that the targets have similar physical characteristics to the anticipated UXO for the site;**

- **Documentation that the use of a single test plot is adequate to test the instrument efficiency in all soils at the site;**
- **Justification for the depth of target placement; and,**
- **Justification for not developing precision and accuracy criteria for the instruments in order to track the efficiency of field teams during the course of the investigation.**

The G858 magnetometer is one of the most highly-rated geophysical survey instruments currently available. The use of the portable STOLS positioning system in conjunction with the G858 was an innovative application used on this project. The G858 has been tested on many occasions at JPG including the UXO Technology Demonstration Programs in mid-1990. This instrument has been proven in the JPG environment. Additionally, the test plot was used for validation of the navigational system approach only (Portable STOLS) and not for the selection of the G858. The prove-out of the navigational system using the test plot was satisfactory.

6. There is no indication that a Quality Assurance Project Plan (QAPP) was utilized to ensure that the investigation contained adequate quality assurance planning, implementation, assessment and reporting in accordance with CERCLA requirements and *U.S. EPA Requirements for Quality Assurance Project Plans for Environmental Data Operations"* (1997). As stated previously, UXO investigations do not need to rigorously conform with the U.S. EPA QAPP guidance that was structured for hazardous waste investigations. However, the U.S. EPA guidance is currently the only applicable guidance for conducting EE/CA investigations under CERCLA. Due to an absence of a QAPP, the following deficiencies are noted:

- **The Report is deficient in describing the quality assurance management structure used to ensure that QA personnel, including the QA manager, operated independently of the unit generating the data. No Quality Assurance (QA) management roles are defined for Army and contractor personnel, and the lines of communication and authority are not presented. Overall, there is no indication that the Army or the Army's contractor operated a QA function separately from the actual project management function for the investigation. The Report should provide a clear definition of all QA functions, including an organization chart that describes the reporting functions, lines of authority and lines of communication used in the investigation. The Report should clearly indicate whether the QA functions operated independently of the unit generating the data.**
- **The Report provides only minimal quality control (QC) requirements to ensure that the data is precise, accurate, representative, complete and comparable. While UXO survey efforts may not fit into the rigorous, traditional QC requirements established for hazardous waste investigations, QC requirements can still be developed to ensure that**

the validity of the UXO surveys can be confirmed. For example, the precision and accuracy of UXO detection methodologies was only confirmed with an extremely small test plot of only three (3) targets, and the test plot was not used to establish QC limits for the various field crews to be tested upon. Horizontal and vertical excavation limits should have been developed based upon equipment testing to ensure that detection equipment and field crews were consistent in identifying, locating and excavating anomalies. The Report should provide documentation that the UXO investigation efforts were precise, accurate, representative, complete and comparable. In addition, the Report should identify what corrective action measures were undertaken in the event that QC criteria were not met.

- **The Report is deficient in describing the procedures used to assess the effectiveness of the project. There is only minimal documentation that extremely limited QC was performed for the project. There is no indication that any surveillances, readiness reviews, technical systems audits, performance evaluations, audits of data quality and data quality assessments were performed. The Report should list and describe all types of assessments used in the project, and provide the assessment schedule that was used. The Report should indicate when independent assessments (*e.g.*, third party assessments) were performed, including the organization and person(s) performing the independent assessments. Also, the Report should define how and to whom the results of the assessments were reported. The Report should define how response actions to non-conforming conditions were addressed and by whom. Finally, the Report should identify the frequency and distribution of reports issued to inform management and regulatory personnel of the status of the project.**
- **The Report is deficient in providing data validation and usability assessments to ensure that the data conform to a specified criteria in order to satisfy project objectives. The Report should also clearly describe the procedures used to review and validate (*i.e.*, accept, reject, quality) data in an objective and consistent manner. The Report should provide all forms and checklists used for reviewing and validating data. The Report should provide a description of chain-of-custody for all data throughout the life cycle of the project.**

Additional deficiencies include, but are not limited to: inadequate procedures for instrument/equipment testing and inspection and inadequate descriptions of the data management structure (*e.g.*, record-keeping requirements and forms).

Either the EE/CA should include a reference to the QAPP where this information is located or this information should be supplied in the body of the EE/CA.

QA/QC procedures used during this project are included in Parsons' and UXB's approved Work Plans. A QAPP is not normally included in the UXO EE/CA process.

7. **The Report does not identify that any offsite areas were investigated, or provide justification for eliminating offsite areas from UXO investigations, even though a significant extent of the 323-Acre Wooded Site borders the JPG installation boundary. Given the fact that 29 UXO-like anomalies were originally identified by the USACE's contractor to the west of Perimeter Road, it is reasonable to assume that adequate justification should be provided for not investigating these UXO-like anomalies in addition to not providing additional UXO surveys in this area. The Report should provide justification for not including offsite areas from UXO investigations for those sites that border the installation boundary. In addition, the Report should provide justification for eliminating the 29 UXO-like anomalies west of Perimeter Road, which had been identified by the USACE contractor.**

Investigation of off-site areas was not included in the EE/CA SOW. The 29 anomalies identified outside the area were not intrusively investigated as they were outside the area defined in the EE/CA SOW. Furthermore, the anomaly signatures were small and similar to those of the investigated anomalies along the road, which were all road trash.

8. **The geophysical mapping report developed by Geo-Centers states that only a limited number of anomalies had their entire magnetic signature contained in the search swath. However, the Report does not provide justification for not investigating nearby anomalies identified by the edge of the search swath. In addition, the Report does not incorporate the identification of additional anomalies into the UXO risk assessment for the site. The Report should provide complete justification for not investigating all anomalies identified by the magnetometer, and include complete justification for not incorporating these anomalies into the UXO risk assessment for the site.**

All signals above a selected threshold were investigated, including those signals with only a partial magnetic signature.

9. The geophysical mapping report developed by Geo-Centers states the USACE selected 29 targets for intrusive investigation, even though Geo-Centers personnel had not identified the 29 targets as being UXO-like. However, the Report does not state the procedure used by the USACE to select these 29 targets as being UXO-like. The Report should provide a clear explanation of the procedure used to select anomalies for intrusive investigation, including a complete list of criteria used to remove anomalies from intrusive investigation. In addition, the Report should reconcile the discrepancies between the selection of anomalies suspected to be UXO-like anomalies by the USACE and Geo-Centers.

As part of the Quality Assurance (QA) procedures for the field investigation, 29 additional anomalies were selected by an independent geophysicist to replace the 29 anomalies identified outside the defined work area. Of these 29 additional anomalies that were selected inside the boundary, 17 were the no contacts found in the area, while the remaining 12 anomalies were non-OE-related scrap. This result indicated that the original analysis performed on the geophysical data collected during the field investigation was appropriate and that the anomalies identified outside of the defined area were of a nature similar to those anomalies that were non-OE-related scrap within the study area.

10. The geophysical mapping report developed by Geo-Centers states that data gaps occurred in the survey data and referenced magnetometer data due to the loss of differential links and inadequate satellite positioning capabilities. However, the Report does not attempt to provide any corrective action for the missing data. The Report should provide the method for incorporating missing data into the UXO risk assessment for the site.

As the field investigation consisted of a geophysical investigation of random areas, the fact that the loss of the differential link at certain points in the survey is inconsequential to draw conclusions as to the general nature of the level of UXO contamination in the area. Incorporation of this data would not alter the conclusions drawn in the EE/CA.

11. The Report does not describe the rationale for performing the investigation during "leaf-on" periods. Geo-Centers states that the accuracy of the UXO survey could have been improved by conducting the geophysical investigation and anomaly reacquisition during periods of little or no leaf canopy. The Report should describe the rationale for performing the investigation during "leaf-on" periods when the accuracy of the investigation instruments was reduced.

All of the anomalies identified by Geo-Centers during their geophysical investigation were reacquired during a "leaf-on" period in an effort to expedite the investigation. While it may be true that reacquisition of the anomalies may have been easier during a period of "leaf-off", it is also moot as all of the anomalies were reacquired during the "leaf-on" period with no problem. Waiting the additional five plus months for the next "leaf-off" period would not have reduced the potential OE hazard and no problems were encountered with reacquiring the anomalies during the "leaf-on" period.

12. The Report indicates that a UXO Calculator was utilized to estimate the UXO density for the 323-Acre Wooded Site (Section 3.4.4, Page 3-14). However, the Report provides no statistical justification for the use of the UXO calculator nor for the overall use of statistics in characterizing the extent of UXO at the site. In addition, the UXO Calculator equation is not provided, and only a vague discussion of the UXO calculator components in provided. The Report should provide complete statistical justification for the use of the UXO Calculator, including justification how the UXO Calculator is used to determine the extent of UXO contamination at the site. In addition, the Report should clearly define the UXO Calculator equation, including a complete description and justification for all components of the equation.

The conclusions drawn in the EE/CA report are not based on a single tool. As such, justification for use of the *UXO Calculator* should not be included in the EE/CA report. The justification for use of this tool was prepared separately and is not included in UXO EE/CAs. Tools such as the *UXO Calculator*, used by the USACE are developed, tested, and fielded in coordination with the USACE's OE Center of Expertise (OE CX).

13. The Report provides a qualitative risk assessment which is very vague and contains numerous unjustified assumptions. For example, no justification is provided for the claims that:

- ?? **0.1 to 5 UXO/acre represents only a medium risk (Table 6.2, Page 6-3);**
- ?? **Public access to land represents only a medium risk (Table 6.3, Page 6-4);**
- ?? **UXO depths of only 6-12 inches below ground surface (bgs) are claimed to be low risk (Table 6.4, Page 6-4) without consideration for erosional processes or soil frost heave;**
- ?? **The accessibility of the site is considered as a medium risk (Table 6.6, Page 6-7), although there is no documentation of the future use of the land, which may contain clearing the woodland.**

The Report should provide complete justification for the assumptions provided in the risk assessment, including a comparison of the UXO risk categories with UXO risk categories at other JPG sites, as well as other UXO sites under contract to USACE.

The assumptions used in the Impact Analysis can be discussed on an overall, programmatic level with the USACE's Huntsville Center.

14. The Report indicates that residual chemical contamination from ordnance burial, detonation or disposal is not included in this investigation (Section 2.3.2, Chemical-Specific Applicable or Relevant and appropriate Requirements [ARARs], Page 2-14). However, the Report does not clarify whether this issue will not be considered at all, or whether future UXO investigations are planned for the site to address chemical contamination. The Report should clarify whether residual chemical contamination is planned to be addressed. In the event that chemical contamination is not planned to be addressed, the Report should provide justification for not addressing chemical contamination.

The Army and USEPA have agreed that soil sampling of areas where in-place detonations have taken place will be discussed by the Army and EPA to establish the level of effort. All soil samples taken to date as a result of the UXO clearance in the East Area of the JPG site have found no results above the method detection limit.

15. The Report does not indicate that an Explosive Safety Submission (ESS) was submitted to the DOD for the 323-Acre Wooded Site. The Report should provide a complete reference for the ESS, including the date of submission and the date of DOD approval.

Current DoD policy, as executed by the DDESB, does not require an Explosive Safety Submission (ESS) for an EE/CA investigation. An ESS submittal is required for the Removal Action phase, if approved.

16. The Report identifies that an Archives Search Report (ASR) was completed for JPG. The ASR was used to scope the extent of the investigation in the areas of concern, including removing adjoining land from the UXO survey. However, there is no indication that the ASR was independently reviewed to determine that the development and interpretation of the ASR is valid and defensible, specifically with regard to eliminating areas from the investigation. The ASR should have been reviewed by an independent UXO expert to verify the depth of the ASR research and to validate the ASR interpretations which were used in eliminating areas from the UXO survey. The Report should be revised to address these issues.

An independent review of the Archives Search Report (ASR) is not conducted as part of this or any other UXO EE/CA investigation. The ASR was used along with many other tools to come up with the recommendation contained in the EE/CA report.

17. The Report is deficient in presenting federal and state ARARs. Although an ARAR section is provided, it is deficient in defining all ARARs for this EE/CA, including, but not limited to, the following: Department of Defense Explosives Safety Board (DDESB) Ammunition and Explosive Safety Standards, Military Munitions Rule, Transportation of Hazardous Waste, Storage of Hazardous Waste and all ARARs administered by the State of Indiana. The Report does not identify AR200-1 (Environmental Protection and Enhancement), which requires U.S. Army compliance with all environmental statutes and regulations, in addition to consultation with federal, state and local regulatory agencies. The Report should provide a complete listing all federal and state ARARs under which the investigation and clearance was performed. The Report should provide documentation that all federal and state ARARs were addressed.

DDESB Ammunition and Explosives Safety Standard is not an ARAR. The Military Munitions Rule falls under RCRA. This rule is not an ARAR for this project. AR200-1 is also not an ARAR as it has not been promulgated, but it will be added to the TBC listing.

18. The Report provides varying total acreage to define the extent of the site under investigation. The Report states the site encompasses 323, however, the geophysical mapping report developed by Geo-Centers indicates the survey consisted of only a 300.5 acre area. The Report should explain the differences in acreage, and provide documentation of the legal extent of the site boundaries.

The acreage of the study area listed in the Geo-Centers report is incorrect. The acreage listed in the EE/CA is correct.

Specific Comments:

1. Section 1.6, Project Organization, Page 1-5: This section provides no indication that appropriate local, state and federal regulatory personnel have been included in planning process for the UXO investigation. The Report should identify all local, state and federal regulatory personnel in the project organization, including lines of communication with regulatory personnel during the course of the project.

Regulatory points of contact are not included in the formal line and block charts of EE/CA reports. Members of the regulatory community were kept informed as to the status of the project throughout its inception, planning, and execution.

2. Section 1.7, Public Outreach, Page 1-7: This section provides only a general description of the installation-wide Restoration Advisory Board (RAB) and the JPG administrative record. The Report does not indicate that a specific community relations plan (CRP) has been developed to address the communities identified in the Report (Section 2.1.6, Demographics, Page 2-7), specifically with regard to UXO concerns. The Report should indicate whether a specific CRP has been developed for the UXO investigation and clearance for the site.

Restoration Advisory Board (RAB) meetings for the JPG site are well documented with their own Web site. This EE/CA project was presented to, and discussed with, the RAB on several occasions. The Regulatory Community is a very important member of the JPG RAB.

3. **Section 2.1.2, Site History, Pages 2-1 to 2-2: This section does not provide a complete description of the 323-acre Wooded Site, including years of operation, specific types of UXO potentially present, the location of former ammunition dumps which have been identified in the area and a summary and reference of the ASR findings for the site. Neither the section nor the site figures present the location of the firing line, anticipated impact areas from artillery firing or possible impact areas from troop training. The section does not describe how the size of the extent and dimensions of the 312-acre site and the 11-acre wooded site were determined, nor why the 312-acre area and the 11-acre area are separated for surveying purposes. In addition, no documentation or references are provided for UXO clearance efforts for the land parcels bordering the 312-acre site and the 11-acre site. The Report should provide responses to these deficiencies.**

   The ASR did not provide any specific uses in the investigated area.

4. **Section 2.1.4, Geology and Soils, Page 2-2: This section provides only general descriptions of installation-wide geology and soils, as was provided in the ASR. There is no indication that soil logs from hazardous toxic waste (HTW) investigations for the area were consulted to provide a general understanding of site specific soils, including the heterogeneity of the soils present. In addition, there is no indication that the test plot soil is consistent with the soil at the majority of the site, or whether separate test lots for different soil types might be applicable to ascertain whether there was a matrix effect on the accuracy and precision of the geophysical instruments. The report should provide site-specific descriptions of the soils present across the site, including a discussion of the applicability of the selected geophysical technologies given the soil types present. In addition, the Report should provide justification for using a single test plot, given the soil complexity present at the site.**

   Site-specific geology and soils for the investigated area would not alter the results of the investigation. Soil matrices at JPG do not vary that significantly to warrant the additional expense of a site-specific soils investigation.

5. **Section 2.1.4, Geology and Soils, Page 2-2: This section does not identify the frost heave potential for the soils present at the site. Frost heave can provide upward movement of objects lodge beneath the ground surface. The Report should provide a description of the frost heave potential for the soils encountered at the site, including a reference for the information.**

   We will add a sentence on the frost heave potential for the soils in the area.

6. **Section 2.1.7, Sensitive Populations and Ecosystems, Page 2-7: This section states that USACE and U.S. Fish and Wildlife Service (USFWS) have not identified any federally listed, threatened or endangered species (flora and fauna) in the 323-acre wooded site. However, the Report does not provide a reference of the documentation for this claim. In addition, the Report does not indicate whether State of Indiana regulatory personnel have been allowed to comment on the presence or absence of sensitive populations in at the 323-acre site. The Report should provide a reference for the claim that the USFWS and appropriate State of Indiana regulatory personnel have not identified any federally listed, threatened or endangered species (flora and fauna) in the 323-acre wooded site.**

A copy of the USFWS letter that states that there are no endangered or threatened species south of the firing line will be added to the EE/CA report.

7. **Section 2.1.8, Previous UXO Site Investigations, Page 2-8: This section attempts to provide brief summaries of UXO site investigations at JPG. However, the Report does not provide adequate descriptions of the sites bordering the 323-Acre Wooded Site, including complete references for the investigation and clearance documents for these areas. In addition, the site figure provided for the UXO investigations (Figure 2-2, page 2-9) is not clear and does not indicate the 323-Acre Wooded Site, nor locations of "found" UXO documented in UXO investigations bordering the site. The Report should provide complete descriptions of the UXO work performed at sites bordering the 323-Acre Wooded Site, including a site figure depicting found UXO on neighboring sites and complete references for the reports documenting the neighboring UXO work. In addition, all site figures should clearly identify the 323-Acre Wooded Site.**

Figure 2-2 will be revised. A discussion will be added to the EE/CA report on the results of the UXO clearance activities conducted on the airfield and the area just north of the study site.

8. Section 3.2, Geophysical Survey, Pages 3-1 to 3-2: This section does not provide adequate justification for scoping the nature and extent of the geophysical investigation. The section only states that "A review of historical records pertaining to JPG and the results of previous field investigations performed on other portions of the facility led to the specific locations for the pseudo-random walk geophysical survey in the site" (Section 3.2.1.3,Page 3-2). No specific description of the selection of the geophysical locations is provided, including justification why other areas were not investigated. In addition, this section states the southern section of the 323-Acre Wooded Site may have UXO from the operation of the former airfield located east of the site. However, no figures of the airfield depicting found UXO is presented to document the spatial relationship of the southern area of the 323-acre site with found UXO at the airfield. The Report should provide complete justification for the methods used to scope the nature and extent of the investigation, and all found UXO from proximate UXO investigations should be identified on figures provided in the Report.

All removal actions conducted at the JPG site are documented in the Administrative Record. The results of the removal actions to the immediate north and east of the 323 acre site (i.e. the western portion of the airfield) will be added to the EE/CA report.

9. Section 3.3, Intrusive Investigation, Page 3-6: The Report does not provide any evaluation why a large number of anomalies were identified on the northern edge of the 312-acre site. The Report should explain why a large number of UXO-like anomalies were targeted in this area, and not other areas that were surveyed.

The anomalies identified along the road are indicative of road trash. All anomalies identified from use of the Portable STOLS inside the study area were intrusively investigated.

10. Section 3.3.4, Intrusive Investigation Procedures, Page 3-9: This section does not identify and cite all relevant reference manuals used in UXO identification and hazard assessments. In addition, no Standard Operating Procedures (SOPs) are provided for these tasks. Therefore, there is no documentation of the criteria used to determine if the item was military debris or the criteria used to assess hazardous materials. The Report should list all applicable reference manuals and procedures that were used for field safety and the identification of ordnance items. In addition, the Report should list all SOPs that were used to determine whether an item was military training debris, and whether an item was hazardous or scrap.

Will add a reference to the UXB Work Plan which details the procedures used in the intrusive investigation.

11. Section 3.4.2, 312-Acre Parcel, Page 3-11: This section indicates that one (1) potentially hazardous Ordnance/Explosive (OE) item was blown-in-place (BIP). However, there is no indication that any sampling for residual chemical contamination was performed around the BIP area. The Report should provide justification for not assessing possible chemical contamination at the BIP area, in accordance with all ARARs.

The Army, IDEM, and USEPA have agreed that soil sampling of areas where in-place detonations have taken place will be handled on a programmatic level. All soil samples taken to date as a result of the UXO clearance in other areas of the JPG site have not revealed any results above the method detection limit.

12. Section 3.4.2, 312-Acre Parcel, Page 3-11: This section indicates that 17 anomalies were not verified when the intrusive investigation was performed. The Report provides no evaluation why these 17 anomalies could not be verified, nor why a large number of the non-verifiable anomalies are present on the northern border of the 323-Acre Wooded Site (Figure 3-4). There is no evaluation of the anomaly identification not being correct, or whether the reacquisition and excavation simply could not locate the anomaly. In addition, there is no documentation of the accuracy of the reacquisition procedure or the limits of the excavation search in order to assess whether the anomaly simply was not relocated correctly or the excavation did not proceed far enough. The Report should provide a complete evaluation why the 17 anomalies could not be verified, including an assessment of the non-verified anomalies on the validity of the geophysical survey techniques and the reacquisition methods.

As stated above, the 17 non-verifiable anomalies were selected by an independent geophysicist after it was discovered that several anomalies originally identified by Geo-Centers were outside the study area. The fact that these 17 anomalies were non-verifiable validates the original anomaly selection process.

13. Section 3.4.2, 312-Acre Parcel, Page 3-11: This section indicates that one (1) potentially hazardous UXO was identified on the southeast border of the 323-Acre Wooded Site. The Report provides no spatial assessment of this UXO location with the remaining portion of the site, nor is any border evaluation provided to possibly extend the borders of this narrow section of the site in order to incorporate a possible impact area in this location. Specifically, the found UXO is located directly on the east border of the site. However, no evaluation of UXO on Tokyo Road or to the east of Tokyo Road in this location is discussed. The Report should provide this information.

An evaluation of the locations of the recovered UXO found no correlation between the one potentially hazardous UXO found in the 312 acre sector and the UXO items found to the north and east (airfield site) of the project site. The UXO items found in the immediate vicinity of the sector will be added to the figure in the EE/CA report.

14. Appendix F: Both EE/CA alternatives 3 and 4 provide for UXO remediation of 154 acres of land identified in the EE/CA. EE/CA alternative 3 involves a surface clearance only, whereas EE/CA alternative 4 (the chosen alternative) involves both a surface clearance and a clearance to a depth of four feet. This is inconsistent with the provisions of DOD Ammunition and Explosives Safety Standards (DOD 6055.9-STD), Chapter 12, Sections 12.3.2 and C12.3.4 which state that any procedures that apply to land disposal of an active installation be submitted to the DDESB for their review and approval. Therefore, this information should be included in the Report.

The citation of the requirements of DoD 6055.9-STD is incorrect. An ESS is not required until after the recommendations contained in the EE/CA have been finalized and public comments have been incorporated into the document.